Natalia Vasquez.

NO AFS#

NSPS OOOOa

JKLM ENERGY LLC

September 23, 2019

**CERTIFIED MAIL** 7016 1370 0001 7137 7331

Director, Air Protection Division
EPA Region III
Mail Code 3AP00
1650 Arch Street
Philadelphia, PA 19103-2029

RECEIVED

SEP 27 2019

Air & Radiation Division

**Subject:** **JKLM Energy, LLC.**
**Headwaters Well Sites 143 and 145**
**NSPS Subpart OOOOa Annual and Initial Reports**

Dear Director,

JKLM Energy, LLC. (JKLM) is hereby submitting the enclosed NSPS Subpart OOOOa Annual and Initial Reports for Headwaters 143 and Headwaters 145 well sites in Ulysses Township, Potter County, Pennsylvania, in accordance with 40 Code of Federal Regulations (CFR) §60.5420a(b). The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to 40 CFR §60.5410a. Subsequent annual reports will be due no later than the same date each year as the initial annual report.

The initial startup for Headwaters 145 was June 27, 2018; therefore, the initial compliance period was from June 27, 2018, through June 27, 2019. This initial report is being submitted by September 25, 2019, which is 90 days after the end of the initial compliance period. The initial annual report for Headwaters 143 was submitted on October 29, 2018, for the compliance period of August 1, 2017, through August 1, 2018.

The Reports include applicable information of the items required under 40 CFR §60.5420a(b).

- General Information
- Well Information
- Centrifugal Compressor Information
- Reciprocating Compressor Information
- Pneumatic Controller Information
- Storage Vessel Information
- Fugitive Emissions Components Information
- Pneumatic Pump Information
- Performance Test Information
- Combustion Control Device Information
- Closed Vent System Certification

If you have any questions or concerns, please contact me at 724-935-9815 or jharrick@emslp.com or Leah Blinn at 412-249-1607 or lblinn@cecinc.com, and we will provide any clarification or additional information.

Sincerely,

Joseph M. Harrick
General Manager, Environmental Safety and Health

Cc: Commonwealth of Pennsylvania, Department of Environmental Protection

2200 Georgetowne Drive | Suite 500 Sewickley, PA 15143

P 724-935-2426

# HEADWATERS 143 (HW 143) & HEADWATERS 145 (HW 145) WELL PADS
# NSPS SUBPART OOOOa ANNUAL AND INITIAL REPORT

**Submitted By:**

**JKLM ENERGY, LLC**
**2200 GEORGETOWN DRIVE, SUITE 500**
**SEWICKLEY, PA 15143**

**Prepared By:**

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**
**PITTSBURGH, PA**

**CEC Project 190-045**

**SEPTEMBER 2019**

Civil & Environmental Consultants, Inc.
Pittsburgh
333 Baldwin Road | Pittsburgh, PA 15205 | p: 412-429-2324 f: 412-429-2114 | www.cecinc.com

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## HEADWATERS 143



## HEADWATERS 145

## LIST OF ATTACHMENTS

# HEADWATERS 143

# NSPS SUBPART OOOOa ANNUAL REPORT

| 1.0 GENERAL INFORMATION<br>*[40 CFR 60.5420a(b)(1)]* | |
|---|---|
| **Requirement** | **Response** |
| Company Name [(b)(1)(i)] | JKLM Energy, LLC |
| Facility Site Name [(b)(1)(i)] | Headwaters 143 |
| US Well ID [(b)(1)(i)] | 37-105-21860-00-00<br>37-105-21861-00-00 |
| Location [(b)(1)(i)]<br>• Address | See Site Location Description and Latitude/Longitude Coordinates below. |
| *If address not available:* | |
| • Site Location Description | Facility is located at the end of T455, which is about 2 miles northeast of the intersection of State Route 1001 with North Brookland Road (Highway 449) in Ulysses Township in Potter County. |
| • Lat/Long Coordinates (NAD 1983) | 41.842470, -77.740307 |
| Identification of each affected facility included in report [(b)(1)(ii)] | Fugitive Components at the Well Site |
| Reporting Period [(b)(1)(iii)]<br>• Beginning Date<br>• End Date | <br>August 1, 2018<br>August 1, 2019 |
| Certification Statement [(b)(1)(iv)] | See **Attachment A** |

| 2.0 WELL INFORMATION<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No well completion operations during the compliance period. |

| 3.0 CENTRIFUGAL COMPRESSOR<br>*[40 CFR 60.5420a(b)(3)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No centrifugal compressors are located at this site. |

| 4.0 RECIPROCATING COMPRESSOR<br>*[40 CFR 60.5420a(b)(4)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No reciprocating compressors are located at this site. |

| 5.0 PNEUMATIC CONTROLLER<br>*[40 CFR 60.5420a(b)(5)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No applicable pneumatic controllers are located at this site. |

| 6.0 STORAGE VESSEL<br>*[40 CFR 60.5420a(b)(6)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No applicable storage vessels are located at this site. |

## 7.0 FUGITIVE EMISSIONS COMPONENTS

| 7.1 SURVEY 1<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Date of Survey [(b)(7)(i)] | August 28, 2018 |
| • Time of Survey [(b)(7)(ii)]<br>○ Start Time<br>○ End Time | <br>1:32 pm<br>2:10 pm |
| • Name of operator(s) performing survey. If using OGI, note the training and experience of the operator. [(b)(7)(iii)] | Ryan Flanagan: Certified OGI Thermographer through June 15, 2022, by Infrared Training Center with five years of LDAR experience. |
| • Ambient temperature, sky conditions, and maximum wind speed [(b)(7)(iv)] | 88.5°F; overcast skies; 2.0 mph winds |
| • Monitoring instrument [(b)(7)(v)] | FLIR Infrared Camera Model GF320 |
| • Any deviations from the monitoring plan [(b)(7)(vi)] | No |
| • Number and type of components where fugitive emissions were detected [(b)(7)(vii)] | (1) One Plug Connector at Inlet Separator |
| • Number and type of components that were not repaired [(b)(7)(viii)] | (0) Zero |
| • Number and type of difficult-to-monitor and unsafe-to-monitor components monitored [(b)(7)(ix)] | (0) Zero |
| • Date of successful repair of components [(b)(7)(x)] | August 28, 2018 |

| 7.1 SURVEY 1<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Number and type of components placed on delay of repair and explanation for delay [(b)(7)(xi)] | (0) Zero |
| • Type of instrument used to resurvey repaired components that could not be repaired during initial finding [(b)(7)(xii)] | Not Applicable |

| 7.2 SURVEY 2<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Date of Survey [(b)(7)(i)] | February 5, 2019 |
| • Time of Survey [(b)(7)(ii)]<br>○ Start Time<br>○ End Time | <br>9:40 am<br>11:25 am |
| • Name of operator(s) performing survey. If using OGI, note the training and experience of the operator. [(b)(7)(iii)] | Eric Feltner: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. Bryan Hazelwood: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. |
| • Ambient temperature, sky conditions, and maximum wind speed [(b)(7)(iv)] | 41°F; overcast skies; 10 knot winds |
| • Monitoring instrument [(b)(7)(v)] | Manufacturer ICI; Model: HC Mirage; Serial: 218 |
| • Any deviations from the monitoring plan [(b)(7)(vi)] | No |
| • Number and type of components where fugitive emissions were detected [(b)(7)(vii)] | (0) Zero |
| • Number and type of components that were not repaired [(b)(7)(viii)] | Not Applicable |
| • Number and type of difficult-to-monitor and unsafe-to-monitor components monitored [(b)(7)(ix)] | (0) Zero |
| • Date of successful repair of components [(b)(7)(x)] | Not Applicable |
| • Number and type of components placed on delay of repair and explanation for delay [(b)(7)(xi)] | Not Applicable |

| 7.2 SURVEY 2<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Type of instrument used to resurvey repaired components that could not be repaired during initial finding [(b)(7)(xii)] | Not Applicable |

| 7.3 SURVEY 3<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Date of Survey [(b)(7)(i)] | June 12, 2019 |
| • Time of Survey [(b)(7)(ii)]<br>o Start Time<br>o End Time | <br>12:30 pm<br>1:53 pm |
| • Name of operator(s) performing survey. If using OGI, note the training and experience of the operator. [(b)(7)(iii)] | Eric Feltner: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. Bryan Hazelwood: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. |
| • Ambient temperature, sky conditions, and maximum wind speed [(b)(7)(iv)] | 79°F; clear skies; 8 knot winds |
| • Monitoring instrument [(b)(7)(v)] | Manufacturer ICI; Model: HC Mirage; Serial: 218 |
| • Any deviations from the monitoring plan [(b)(7)(vi)] | No |
| • Number and type of components where fugitive emissions were detected [(b)(7)(vii)] | (0) Zero |
| • Number and type of components that were not repaired [(b)(7)(viii)] | Not Applicable |
| • Number and type of difficult-to-monitor and unsafe-to-monitor components monitored [(b)(7)(ix)] | (0) Zero |
| • Date of successful repair of components [(b)(7)(x)] | Not Applicable |
| • Number and type of components placed on delay of repair and explanation for delay [(b)(7)(xi)] | Not Applicable |
| • Type of instrument used to resurvey repaired components that could not be repaired during initial finding [(b)(7)(xii)] | Not Applicable |

| 8.0 PNEUMATIC PUMP<br>*[40 CFR 60.5420a(b)(8)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No applicable pneumatic pumps are located at this site. |

| 9.0 CLOSED VENT SYSTEM CERTIFICATION<br>*[40 CFR 60.5420a(b)(12)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No closed vent systems are located at this site. |

# HEADWATERS 145

# NSPS SUBPART OOOOa INITIAL REPORT

| 1.0 GENERAL INFORMATION<br>*[40 CFR 60.5420a(b)(1)]* | |
|---|---|
| **Requirement** | **Response** |
| Company Name [(b)(1)(i)] | JKLM Energy, LLC |
| Facility Site Name [(b)(1)(i)] | Headwaters 145 |
| US Well ID [(b)(1)(i)] | 37-105-21875-00-00<br>37-105-21876-00-00<br>37-105-21877-00-00<br>37-105-21878-00-00<br>37-105-21879-00-00<br>37-105-21880-00-00 |
| Location [(b)(1)(i)]<br>• Address | See Site Location Description and Latitude/Longitude Coordinates below. |
| *If address not available:* | |
| • Site Location Description | Facility is located about 1.3 miles down an access road at the end of T455, which is about 2 miles northeast of the intersection of State Route 1001 with North Brookland Road (Highway 449) in Ulysses Township in Potter County. |
| • Lat/Long Coordinates (NAD 1983) | 41.837040, -77.732025 |
| Identification of each affected facility included in report [(b)(1)(ii)] | Well: Headwaters 145-1HU;<br>Well: Headwaters 145-2HU;<br>Well: Headwaters 145-3HU;<br>Well: Headwaters 145-4HU;<br>Well: Headwaters 145-5HU;<br>Well: Headwaters 145-6HU; and<br>Fugitive Components at the Well Site |
| Reporting Period [(b)(1)(iii)]<br>• Beginning Date<br>• End Date | <br>June 27, 2018<br>June 27, 2019 |
| Certification Statement [(b)(1)(iv)] | See **Attachment A** |

## 2.0 WELL INFORMATION

| 2.1 HEADWATERS 145-1HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records identifying each well completion operation for each well affected facility. [(b)(2)(i)] | See **Attachment B** |

| 2.1 HEADWATERS 145-1HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375a. [(b)(2)(i) and (ii)] | Not Applicable. There were no deviations associated with well completion utilizing hydraulic fracturing from the standards of 60.5375a during the Reporting Period. |
| • Log of each well completion operation. [(b)(2)(i)] | See **Attachment B** |
| • Records if claiming Exception under 60.5375a(a)(3) – unable to route to a completion combustion device. [(b)(2)(i)] | See **Attachment B** |
| *or* | |
| • If using Digital Photograph in lieu of the records required in 60.5420a(c)(1)(i)-(iv), retain records specified in 60.5410a(a)(4) [(b)(2)(i)] | Not Applicable |
| • Records if the Well is not subject to the Well Completion Standards according to 60.5375a(g) – Facility with less than 300 scf of gas per stock tank barrel of oil produced. [(b)(2)(i)] | Not Applicable |
| • Records that support a low pressure well determination including supporting inputs and calculations. [(b)(2)(iii) | Not Applicable |

| 2.2 HEADWATERS 145-2HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records identifying each well completion operation for each well affected facility. [(b)(2)(i)] | See **Attachment B** |
| • Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375a. [(b)(2)(i) and (ii)] | Not Applicable. There were no deviations associated with well completion utilizing hydraulic fracturing from the standards of 60.5375a during the Reporting Period. |
| • Log of each well completion operation. [(b)(2)(i)] | See **Attachment B** |
| • Records if claiming Exception under 60.5375a(a)(3) – unable to route to a completion combustion device. [(b)(2)(i)] | See **Attachment B** |
| *or* | |

| 2.2 HEADWATERS 145-2HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • If using Digital Photograph in lieu of the records required in 60.5420a(c)(1)(i)-(iv), retain records specified in 60.5410a(a)(4) [(b)(2)(i)] | Not Applicable |
| • Records if the Well is not subject to the Well Completion Standards according to 60.5375a(g) – Facility with less than 300 scf of gas per stock tank barrel of oil produced. [(b)(2)(i)] | Not Applicable |
| • Records that support a low pressure well determination including supporting inputs and calculations. [(b)(2)(iii) | Not Applicable |

| 2.3 HEADWATERS 145-3HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records identifying each well completion operation for each well affected facility. [(b)(2)(i)] | See **Attachment B** |
| • Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375a. [(b)(2)(i) and (ii)] | Not Applicable. There were no deviations associated with well completion utilizing hydraulic fracturing from the standards of 60.5375a during the Reporting Period. |
| • Log of each well completion operation. [(b)(2)(i)] | See **Attachment B** |
| • Records if claiming Exception under 60.5375a(a)(3) – unable to route to a completion combustion device. [(b)(2)(i)] | See **Attachment B** |
| *or* | |
| • If using Digital Photograph in lieu of the records required in 60.5420a(c)(1)(i)-(iv), retain records specified in 60.5410a(a)(4) [(b)(2)(i)] | Not Applicable |
| • Records if the Well is not subject to the Well Completion Standards according to 60.5375a(g) – Facility with less than 300 scf of gas per stock tank barrel of oil produced. [(b)(2)(i)] | Not Applicable |

| 2.3 HEADWATERS 145-3HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records that support a low pressure well determination including supporting inputs and calculations. [(b)(2)(iii) | Not Applicable |

| 2.4 HEADWATERS 145-4HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records identifying each well completion operation for each well affected facility. [(b)(2)(i)] | See **Attachment B** |
| • Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375a. [(b)(2)(i) and (ii)] | Not Applicable. There were no deviations associated with well completion utilizing hydraulic fracturing from the standards of 60.5375a during the Reporting Period. |
| • Log of each well completion operation. [(b)(2)(i)] | See **Attachment B** |
| • Records if claiming Exception under 60.5375a(a)(3) – unable to route to a completion combustion device. [(b)(2)(i)] | See **Attachment B** |
| *or* | |
| • If using Digital Photograph in lieu of the records required in 60.5420a(c)(1)(i)-(iv), retain records specified in 60.5410a(a)(4) [(b)(2)(i)] | Not Applicable |
| • Records if the Well is not subject to the Well Completion Standards according to 60.5375a(g) – Facility with less than 300 scf of gas per stock tank barrel of oil produced. [(b)(2)(i)] | Not Applicable |
| • Records that support a low pressure well determination including supporting inputs and calculations. [(b)(2)(iii) | Not Applicable |

| 2.5 HEADWATERS 145-5HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records identifying each well completion operation for each well affected facility. [(b)(2)(i)] | See **Attachment B** |

| 2.5 HEADWATERS 145-5HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375a. [(b)(2)(i) and (ii)] | Not Applicable. There were no deviations associated with well completion utilizing hydraulic fracturing from the standards of 60.5375a during the Reporting Period. |
| • Log of each well completion operation. [(b)(2)(i)] | See **Attachment B** |
| • Records if claiming Exception under 60.5375a(a)(3) – unable to route to a completion combustion device. [(b)(2)(i)] | See **Attachment B** |
| *or* | |
| • If using Digital Photograph in lieu of the records required in 60.5420a(c)(1)(i)-(iv), retain records specified in 60.5410a(a)(4) [(b)(2)(i)] | Not Applicable |
| • Records if the Well is not subject to the Well Completion Standards according to 60.5375a(g) – Facility with less than 300 scf of gas per stock tank barrel of oil produced. [(b)(2)(i)] | Not Applicable |
| • Records that support a low pressure well determination including supporting inputs and calculations. [(b)(2)(iii) | Not Applicable |

| 2.6 HEADWATERS 145-6HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • Records identifying each well completion operation for each well affected facility. [(b)(2)(i)] | See **Attachment B** |
| • Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in §60.5375a. [(b)(2)(i) and (ii)] | Not Applicable. There were no deviations associated with well completion utilizing hydraulic fracturing from the standards of 60.5375a during the Reporting Period. |
| • Log of each well completion operation. [(b)(2)(i)] | See **Attachment B** |
| • Records if claiming Exception under 60.5375a(a)(3) – unable to route to a completion combustion device. [(b)(2)(i)] | See **Attachment B** |
| *or* | |

| 2.6 HEADWATERS 145-6HU<br>*[40 CFR 60.5420a(b)(2)]* | |
|---|---|
| **Requirement** | **Response** |
| • If using Digital Photograph in lieu of the records required in 60.5420a(c)(1)(i)-(iv), retain records specified in 60.5410a(a)(4) [(b)(2)(i)] | Not Applicable |
| • Records if the Well is not subject to the Well Completion Standards according to 60.5375a(g) – Facility with less than 300 scf of gas per stock tank barrel of oil produced. [(b)(2)(i)] | Not Applicable |
| • Records that support a low pressure well determination including supporting inputs and calculations. [(b)(2)(iii) | Not Applicable |

| 3.0 CENTRIFUGAL COMPRESSOR<br>*[40 CFR 60.5420a(b)(3)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No centrifugal compressors are located at this site. |

| 4.0 RECIPROCATING COMPRESSOR<br>*[40 CFR 60.5420a(b)(4)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No reciprocating compressors are located at this site. |

| 5.0 PNEUMATIC CONTROLLER<br>*[40 CFR 60.5420a(b)(5)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No applicable pneumatic controllers are located at this site. |

| 6.0 STORAGE VESSEL<br>*[40 CFR 60.5420a(b)(6)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No applicable storage vessels are located at this site. |

## 7.0 FUGITIVE EMISSIONS COMPONENTS

| 7.1 SURVEY 1<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Date of Survey [(b)(7)(i)] | August 28, 2018 |
| • Time of Survey [(b)(7)(ii)]<br>○ Start Time<br>○ End Time | <br>2:27 pm<br>3:39 pm |
| • Name of operator(s) performing survey. If using OGI, note the training and experience of the operator. [(b)(7)(iii)] | Ryan Flanagan: Certified OGI Thermographer through June 15, 2022, by Infrared Training Center with five years of LDAR experience. |
| • Ambient temperature, sky conditions, and maximum wind speed [(b)(7)(iv)] | 86.3°F; clear skies; 7.6 mph winds |
| • Monitoring instrument [(b)(7)(v)] | FLIR Infrared Camera Model GF320 |
| • Any deviations from the monitoring plan [(b)(7)(vi)] | No |
| • Number and type of components where fugitive emissions were detected [(b)(7)(vii)] | (1) One Gauge/Regulator Other at GPU<br>(1) One Union Connector at GPU<br>(1) One Union Connector at Wellhead |
| • Number and type of components that were not repaired [(b)(7)(viii)] | (0) Zero |
| • Number and type of difficult-to-monitor and unsafe-to-monitor components monitored [(b)(7)(ix)] | (0) Zero |
| • Date of successful repair of components [(b)(7)(x)] | August 28, 2018 |
| • Number and type of components placed on delay of repair and explanation for delay [(b)(7)(xi)] | (0) Zero |
| • Type of instrument used to resurvey repaired components that could not be repaired during initial finding [(b)(7)(xii)] | Not Applicable |

| 7.2 SURVEY 2<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Date of Survey [(b)(7)(i)] | February 4, 2019 |
| • Time of Survey [(b)(7)(ii)]<br>○ Start Time<br>○ End Time | <br>3:40 pm<br>5:09 pm |

| 7.2 SURVEY 2<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Name of operator(s) performing survey. If using OGI, note the training and experience of the operator. [(b)(7)(iii)] | Eric Feltner: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. Bryan Hazelwood: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. |
| • Ambient temperature, sky conditions, and maximum wind speed [(b)(7)(iv)] | 56°F; clear skies; 8.5 knot winds |
| • Monitoring instrument [(b)(7)(v)] | Manufacturer ICI; Model: HC Mirage; Serial: 218 |
| • Any deviations from the monitoring plan [(b)(7)(vi)] | No |
| • Number and type of components where fugitive emissions were detected [(b)(7)(vii)] | (0) Zero |
| • Number and type of components that were not repaired [(b)(7)(viii)] | Not Applicable |
| • Number and type of difficult-to-monitor and unsafe-to-monitor components monitored [(b)(7)(ix)] | (0) Zero |
| • Date of successful repair of components [(b)(7)(x)] | Not Applicable |
| • Number and type of components placed on delay of repair and explanation for delay [(b)(7)(xi)] | Not Applicable |
| • Type of instrument used to resurvey repaired components that could not be repaired during initial finding [(b)(7)(xii)] | Not Applicable |

| 7.3 SURVEY 3<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Date of Survey [(b)(7)(i)] | June 12, 2019 |
| • Time of Survey [(b)(7)(ii)]<br>o Start Time<br>o End Time | <br>8:42 am<br>10:20 am |

| 7.3 SURVEY 3<br>*[40 CFR 60.5420a(b)(7)]* | |
|---|---|
| **Requirement** | **Response** |
| • Name of operator(s) performing survey. If using OGI, note the training and experience of the operator. [(b)(7)(iii)] | Eric Feltner: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. Bryan Hazelwood: Certified OGI Thermographer through January 25, 2023, by Infrared Training Center with one year of LDAR experience. |
| • Ambient temperature, sky conditions, and maximum wind speed [(b)(7)(iv)] | 75°F; clear skies; 9 knot winds |
| • Monitoring instrument [(b)(7)(v)] | Manufacturer ICI; Model: HC Mirage; Serial: 218 |
| • Any deviations from the monitoring plan [(b)(7)(vi)] | No |
| • Number and type of components where fugitive emissions were detected [(b)(7)(vii)] | (0) Zero |
| • Number and type of components that were not repaired [(b)(7)(viii)] | Not Applicable |
| • Number and type of difficult-to-monitor and unsafe-to-monitor components monitored [(b)(7)(ix)] | (0) Zero |
| • Date of successful repair of components [(b)(7)(x)] | Not Applicable |
| • Number and type of components placed on delay of repair and explanation for delay [(b)(7)(xi)] | Not Applicable |
| • Type of instrument used to resurvey repaired components that could not be repaired during initial finding [(b)(7)(xii)] | Not Applicable |

| 8.0 PNEUMATIC PUMP<br>*[40 CFR 60.5420a(b)(8)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No applicable pneumatic pumps are located at this site. |

| 9.0 CLOSED VENT SYSTEM CERTIFICATION<br>*[40 CFR 60.5420a(b)(12)]* | |
|---|---|
| **Requirement** | **Response** |
| | Not Applicable. No closed vent systems are located at this site. |

# ATTACHMENT A

# CERTIFICATION STATEMENT

**40 CFR SUBPART OOOOa ANNUAL REPORT**
**CERTIFICATION STATEMENT**
40 CFR 60.5420a(b)(1)(iv)

Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Joseph M. Harrick

Printed Name

General Manager, Environmental Health and Safety

Title

Signature

9-23-2019

Date

# ATTACHMENT B

# WELL COMPLETION OPERATION LOGS

**Civil & Environmental Consultants, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| SUBJECT | Completion Operations - 1HU | | | PROJECT NO. | 190-045 |
| PROJECT | JKLM Energy, LLC - Headwater 145 | | | PAGE | 1 |
| | Potter County, Pennsylvania | | | | |
| MADE BY: | AD | DATE: 9/10/2019 | CHECKED BY: KW | DATE: | 9/17/2019 |

| | |
|---|---|
| Well Name | 145 1HU |
| API Well Number | 37-105-21875-00-00 |
| County and State | Potter County, PA |
| Municipality | Ulysses Township |
| Well Location | 41.837040, -77.732025 |
| Reporting Period | August 6, 2018, - August 31, 2018 |
| Date and Time of Flowback Onset | August 6, 2018; 8:45 AM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | August 6, 2018; 1:00 PM |
| Date and Time Well was Shut in and Flowback Equipment Permanently Disconnected OR Date and Time of Startup of Production | August 31, 2018; 7:00 AM |
| Duration of Flowback (hr) | 598.25 |
| Duration of Recovery (hr)[2] | 594.00 |
| Type of Recovery[3] | Routed to the gas flow line |
| Description of Why All the Types of Recovery Are Technically Infeasible[4] | NA |
| If Recovery is Technically Infeasible and Exception[5] from Combustion Claimed | NA |
| Exception Claimed | NA |
| Start Date | NA |
| End Date | NA |
| Reason for exception | NA |
| Duration of Combustion (hr) | 0 |
| Duration of Venting (hr) | 0 |
| Reason for Venting in Lieu of Capture or Combustion | NA |
| Separator Located Onsite During Entire Flowback Period | Yes |

**Notes**

[1] Initial Flowback is the period which begins at the onset of flowback and ends when it is technically feasible for a separator to function.

[2] Not required for wildcat well, delineation well, non-wildcat low pressure well, or non-delineation low pressure well.

[3] Types of recovery:

Routed to the gas flow line or collection system,
Re-injected into the well or another well,
Used as an onsite fuel source, or
Used for another useful purpose that a purchased fuel or raw material would serve.

[4] Examples of information to be included in description of recovery being technically infeasible:

Name and location of the nearest gathering line and technical considerations preventing routing to this line,
Capture, re-injection, and reuse technologies considered and aspects of gas or equipment preventing use as a fuel onsite, and
Technical considerations preventing use of recovered gas for other useful purpose that a purchased fuel or raw material would

[5] Types of exceptions:

Conditions that may result in a fire hazard or explosion, or
Where high heat emissions may negatively impact tundra, permafrost, or waterways.

| Civil & Environmental Consultants, Inc. | | | | | |
|---|---|---|---|---|---|
| SUBJECT | Completion Operations - 2HU | | | PROJECT NO. | 190-045 |
| PROJECT | JKLM Energy, LLC - Headwater 145 | | | PAGE | 2 |
| | Potter County, Pennsylvania | | | | |
| MADE BY: | AD | DATE: 9/10/2019 | CHECKED BY: KW | DATE: | 9/17/2019 |

| | |
|---|---|
| Well Name | 145 2HU |
| API Well Number | 37-105-21876-00-00 |
| County and State | Potter County, PA |
| Municipality | Ulysses Township |
| Well Location | 41.837051, -77.731971 |
| Reporting Period | July 18, 2018, - August 6, 2018 |
| Date and Time of Flowback Onset | July 18, 2018; 10:50 AM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | July 18, 2018; 12:00 PM |
| Date and Time Well was Shut in and Flowback Equipment Permanently Disconnected OR Date and Time of Startup of Production | August 6, 2018; 7:00 AM |
| Duration of Flowback (hr) | 452.17 |
| Duration of Recovery (hr)[2] | 451.00 |
| Type of Recovery[3] | Routed to the gas flow line |
| Description of Why All the Types of Recovery Are Technically Infeasible[4] | NA |
| If Recovery is Technically Infeasible and Exception[5] from Combustion Claimed | NA |
| Exception Claimed | NA |
| Start Date | NA |
| End Date | NA |
| Reason for exception | NA |
| Duration of Combustion (hr) | 0 |
| Duration of Venting (hr) | 0 |
| Reason for Venting in Lieu of Capture or Combustion | NA |
| Separator Located Onsite During Entire Flowback Period | Yes |

**Notes**

[1] Initial Flowback is the period which begins at the onset of flowback and ends when it is technically feasible for a separator to function.

[2] Not required for wildcat well, delineation well, non-wildcat low pressure well, or non-delineation low pressure well.

[3] Types of recovery:

Routed to the gas flow line or collection system,
Re-injected into the well or another well,
Used as an onsite fuel source, or
Used for another useful purpose that a purchased fuel or raw material would serve.

[4] Examples of information to be included in description of recovery being technically infeasible:

Name and location of the nearest gathering line and technical considerations preventing routing to this line,
Capture, re-injection, and reuse technologies considered and aspects of gas or equipment preventing use as a fuel onsite, and
Technical considerations preventing use of recovered gas for other useful purpose that a purchased fuel or raw material would

[5] Types of exceptions:

Conditions that may result in a fire hazard or explosion, or
Where high heat emissions may negatively impact tundra, permafrost, or waterways.

**Civil & Environmental Consultants, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| SUBJECT | Completion Operations - 3HU | | | PROJECT NO. | 190-045 |
| PROJECT | JKLM Energy, LLC - Headwater 145 | | | PAGE | 3 |
| | Potter County, Pennsylvania | | | | |
| MADE BY: | AD | DATE: 9/10/2019 | CHECKED BY: KW | DATE: | 9/17/2019 |

| | |
|---|---|
| Well Name | 145 3HU |
| API Well Number | 37-105-21877-00-00 |
| County and State | Potter County, PA |
| Municipality | Ulysses Township |
| Well Location | 41.837061, -77.731918 |
| Reporting Period | July 10, 2018, - August 31, 2018 |
| Date and Time of Flowback Onset | July 10, 2018; 7:19 AM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | July 10, 2018; 11:00 AM |
| Date and Time of Each Occurrence of Returning to Initial Flowback[1] | July 16, 2018; 5:30 PM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | July 16, 2018; 5:30 PM |
| Date and Time Well was Shut in and Flowback Equipment Permanently Disconnected OR Date and Time of Startup of Production | August 31, 2018; 7:25 AM |
| Duration of Flowback (hr) | 1,240.10 |
| Duration of Recovery (hr)[2] | 1,236.42 |
| Type of Recovery[3] | Routed to the gas flow line |
| Description of Why All the Types of Recovery Are Technically Infeasible[4] | NA |
| If Recovery is Technically Infeasible and Exception[5] from Combustion Claimed | NA |
| Exception Claimed | NA |
| Start Date | NA |
| End Date | NA |
| Reason for exception | NA |
| Duration of Combustion (hr) | 0 |
| Duration of Venting (hr) | 0 |
| Reason for Venting in Lieu of Capture or Combustion | NA |
| Separator Located Onsite During Entire Flowback Period | Yes |

**Notes**

[1] Initial Flowback is the period which begins at the onset of flowback and ends when it is technically feasible for a separator to function.

[2] Not required for wildcat well, delineation well, non-wildcat low pressure well, or non-delineation low pressure well.

[3] Types of recovery:

Routed to the gas flow line or collection system,
Re-injected into the well or another well,
Used as an onsite fuel source, or
Used for another useful purpose that a purchased fuel or raw material would serve.

[4] Examples of information to be included in description of recovery being technically infeasible:

Name and location of the nearest gathering line and technical considerations preventing routing to this line,
Capture, re-injection, and reuse technologies considered and aspects of gas or equipment preventing use as a fuel onsite, and
Technical considerations preventing use of recovered gas for other useful purpose that a purchased fuel or raw material would

[5] Types of exceptions:

Conditions that may result in a fire hazard or explosion, or
Where high heat emissions may negatively impact tundra, permafrost, or waterways.

**Civil & Environmental Consultants, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| SUBJECT | Completion Operations - 4HU | | | PROJECT NO. | 190-045 |
| PROJECT | JKLM Energy, LLC - Headwater 145 | | | PAGE | 4 |
| | Potter County, Pennsylvania | | | | |
| MADE BY: | AD | DATE: 9/10/2019 | CHECKED BY: KW | DATE: | 9/17/2019 |

| | |
|---|---|
| Well Name | 145 4HU |
| API Well Number | 37-105-21878-00-00 |
| County and State | Potter County, PA |
| Municipality | Ulysses Township |
| Well Location | 41.837072, -77.731865 |
| Reporting Period | July 3, 2018, - July 18, 2018 |
| Date and Time of Flowback Onset | July 3, 2018; 6:55 AM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | July 3, 2018; 7:10 AM |
| Date and Time of Each Occurrence of Returning to Initial Flowback[1] | July 16, 2018; 4:30 PM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | July 16, 2018; 4:30 PM |
| Date and Time Well was Shut in and Flowback Equipment Permanently Disconnected OR Date and Time of Startup of Production | July 18, 2018; 7:00 AM |
| Duration of Flowback (hr) | 353.08 |
| Duration of Recovery (hr)[2] | 352.83 |
| Type of Recovery[3] | Routed to the gas flow line |
| Description of Why All the Types of Recovery Are Technically Infeasible[4] | NA |
| If Recovery is Technically Infeasible and Exception[5] from Combustion Claimed | NA |
| Exception Claimed | NA |
| Start Date | NA |
| End Date | NA |
| Reason for exception | NA |
| Duration of Combustion (hr) | 0 |
| Duration of Venting (hr) | 0 |
| Reason for Venting in Lieu of Capture or Combustion | NA |
| Separator Located Onsite During Entire Flowback Period | Yes |

**Notes**

[1] Initial Flowback is the period which begins at the onset of flowback and ends when it is technically feasible for a separator to function.

[2] Not required for wildcat well, delineation well, non-wildcat low pressure well, or non-delineation low pressure well.

[3] Types of recovery:

Routed to the gas flow line or collection system,
Re-injected into the well or another well,
Used as an onsite fuel source, or
Used for another useful purpose that a purchased fuel or raw material would serve.

[4] Examples of information to be included in description of recovery being technically infeasible:

Name and location of the nearest gathering line and technical considerations preventing routing to this line,
Capture, re-injection, and reuse technologies considered and aspects of gas or equipment preventing use as a fuel onsite, and
Technical considerations preventing use of recovered gas for other useful purpose that a purchased fuel or raw material would

[5] Types of exceptions:

Conditions that may result in a fire hazard or explosion, or
Where high heat emissions may negatively impact tundra, permafrost, or waterways.

**Civil & Environmental Consultants, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| SUBJECT | Completion Operations - 5HU | | | PROJECT NO. | 190-045 |
| PROJECT | JKLM Energy, LLC - Headwater 145 | | | PAGE | 5 |
| | Potter County, Pennsylvania | | | | |
| MADE BY: | AD | DATE: 9/10/2019 | CHECKED BY: KW | DATE: | 9/17/2019 |

| | |
|---|---|
| Well Name | 145 5HU |
| API Well Number | 37-105-21879-00-00 |
| County and State | Potter County, PA |
| Municipality | Ulysses Township |
| Well Location | 41.837082, -77.731812 |
| Reporting Period | June 27, 2018, - July 3, 2018 |
| Date and Time of Flowback Onset | June 27, 2018; 10:25 AM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | June 27, 2018; 2:30 PM |
| Date and Time Well was Shut in and Flowback Equipment Permanently Disconnected OR Date and Time of Startup of Production | July 3, 2018; 6:00 AM |
| Duration of Flowback (hr) | 139.58 |
| Duration of Recovery (hr)[2] | 135.50 |
| Type of Recovery[3] | Routed to the gas flow line |
| Description of Why All the Types of Recovery Are Technically Infeasible[4] | NA |
| If Recovery is Technically Infeasible and Exception[5] from Combustion Claimed | NA |
| Exception Claimed | NA |
| Start Date | NA |
| End Date | NA |
| Reason for exception | NA |
| Duration of Combustion (hr) | 0 |
| Duration of Venting (hr) | 0 |
| Reason for Venting in Lieu of Capture or Combustion | NA |
| Separator Located Onsite During Entire Flowback Period | Yes |

**Notes**

[1] Initial Flowback is the period which begins at the onset of flowback and ends when it is technically feasible for a separator to function.

[2] Not required for wildcat well, delineation well, non-wildcat low pressure well, or non-delineation low pressure well.

[3] Types of recovery:

Routed to the gas flow line or collection system,
Re-injected into the well or another well,
Used as an onsite fuel source, or
Used for another useful purpose that a purchased fuel or raw material would serve.

[4] Examples of information to be included in description of recovery being technically infeasible:

Name and location of the nearest gathering line and technical considerations preventing routing to this line,
Capture, re-injection, and reuse technologies considered and aspects of gas or equipment preventing use as a fuel onsite, and
Technical considerations preventing use of recovered gas for other useful purpose that a purchased fuel or raw material would

[5] Types of exceptions:

Conditions that may result in a fire hazard or explosion, or
Where high heat emissions may negatively impact tundra, permafrost, or waterways.

**Civil & Environmental Consultants, Inc.**

| | | | | | |
|---|---|---|---|---|---|
| SUBJECT | Completion Operations - 6HU | | | PROJECT NO. | 190-045 |
| PROJECT | JKLM Energy, LLC - Headwater 145 | | | PAGE | 6 |
| | Potter County, Pennsylvania | | | | |
| MADE BY: | AD | DATE: 9/10/2019 | CHECKED BY: KW | DATE: | 9/17/2019 |

| | |
|---|---|
| Well Name | 145 6HU |
| API Well Number | 37-105-21880-00-00 |
| County and State | Potter County, PA |
| Municipality | Ulysses Township |
| Well Location | 41.837093, -77.731759 |
| Reporting Period | June 28, 2018, - July 10, 2018 |
| Date and Time of Flowback Onset | June 28, 2018; 7:20 AM |
| Date and Time of Each Attempt to Direct Flowback to a Separator | June 28, 2018; 9:30 AM |
| Date and Time Well was Shut in and Flowback Equipment Permanently Disconnected OR Date and Time of Startup of Production | July 10, 2018; 6:00 AM |
| Duration of Flowback (hr) | 286.67 |
| Duration of Recovery (hr)[2] | 284.50 |
| Type of Recovery[3] | Routed to the gas flow line |
| Description of Why All the Types of Recovery Are Technically Infeasible[4] | NA |
| If Recovery is Technically Infeasible and Exception[5] from Combustion Claimed | NA |
| Exception Claimed | NA |
| Start Date | NA |
| End Date | NA |
| Reason for exception | NA |
| Duration of Combustion (hr) | 0 |
| Duration of Venting (hr) | 0 |
| Reason for Venting in Lieu of Capture or Combustion | NA |
| Separator Located Onsite During Entire Flowback Period | Yes |

**Notes**

[1] Initial Flowback is the period which begins at the onset of flowback and ends when it is technically feasible for a separator to function.

[2] Not required for wildcat well, delineation well, non-wildcat low pressure well, or non-delineation low pressure well.

[3] Types of recovery:

Routed to the gas flow line or collection system,

Re-injected into the well or another well,

Used as an onsite fuel source, or

Used for another useful purpose that a purchased fuel or raw material would serve.

[4] Examples of information to be included in description of recovery being technically infeasible:

Name and location of the nearest gathering line and technical considerations preventing routing to this line,

Capture, re-injection, and reuse technologies considered and aspects of gas or equipment preventing use as a fuel onsite, and

Technical considerations preventing use of recovered gas for other useful purpose that a purchased fuel or raw material would

[5] Types of exceptions:

Conditions that may result in a fire hazard or explosion, or

Where high heat emissions may negatively impact tundra, permafrost, or waterways.